

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WO 39694	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/11135	International filing date (day/month/year) 08/10/2003	Priority date (day/month/year) 09/10/2002
International Patent Classification (IPC) or national classification and IPC H04B7/185		
Applicant ND SATCOM AG et al.		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of 6 sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 6 sheets.	
3.	This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2 with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application	

Date of submission of the demand 06/05 /2004	Date of completion of this report 14.01.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340-2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Larcinese, A Tel. +31 70 340-3823

I: Basis of the report

1. As regards the **parts** of the international application (*substitute sheets which have been furnished to the Receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-40 as originally filed

Claims, No.:

1-17 received on July 19, 2004 by letter of July 19, 2004

Drawings, sheets:

1/7-7/7 as originally filed

2. As regards the **language**: All aforementioned parts were available to the Office in the language in which the international application was filed or they were filed in this language, unless stated otherwise under this item:

The parts were available to the Office in the language: and/or were filed in this language; which is

- ☐ the language of the translation which was filed for the purpose of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation filed for the purpose of the international preliminary examination (under Rule 55.2 and/or 55.3).

3. As regards the **nucleotide and/or amino acid sequence** disclosed in the international application the international preliminary examination was carried out on the basis of the sequence record which:

- ☐ is included in the international application in the written form.
- ☐ was filed along with the international application in a computer-readable form.
- ☐ was filed with the Office subsequently in written form.
- ☐ was filed with the Office subsequently in a computer-readable form.
- ☐ The declaration that the subsequently filed written sequence record does not go beyond the content of disclosure of the international application on the filing date was furnished.
- ☐ The declaration that the information in a computer-readable form corresponds to the written sequence record was furnished.

4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

International application No. PCT/EP 03/11135

- ☐ Description, pages:
- ☐ Claims, No.:
- ☐ Drawings, sheet:

5. ☐ This report has been established as if (some of) the amendments had not been made, since for the given reasons they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Substitute sheets containing such amendments are referred to under item 1; they have to be added to this report).

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting this statement

1. Statement

Novelty (N) Yes: Claims
 No: Claims 1-17

Inventive step (IS) Yes: Claims
 No: Claims 1-17

Industrial applicability (IA) Yes: Claims 1-17
 No: Claims

2. Citations and explanations
see separate sheet

As to item V

Reasoned statement with regard to novelty, inventive step and industrial applicability; citations and explanations supporting this statement

1. Reference is made to the following documents:
D1: US-B-6 366 7611 (MONTPETIT MARIE-JOS EACUTE) April 2, 2002 (2002-04-02)
D2: EP-A-0 680 168 (AT & T CORP) November 2, 1995 (1995-11-02)
2. The application does not meet the requirements of Article 6 PCT, since claims 1, 9 and 17 are not clear.
 - 2.1 Claim 1 does not meet the requirements of Article 6 PCT because the matter for which protection is sought is not defined clearly. In the claim, an attempt is made to define the subject-matter by the result to be achieved; thus, however, only the problem to be solved is indicated without offering the technical features necessary for achieving this result. In claim 1, page 2/6, lines 15-17, it is not clear how the contributions transmittable in the store and forward mode are shifted and how the transmitting stations are coordinated.
 - 2.2 In claim 1, page 2/6, lines 15-16, the sentence "... by shifting contributions to be transmitted in the store and forward mode within the frequency-time diagram" is not clear. It is not evident whether the contributions are shifted within the time or within the frequency. Besides, the applicant is asked to indicate the passages of the originally filed application which support the amendment of the claim.
 - 2.3 It is not clear what is meant by the expression "the area of the traffic contributions is maximized" (claim 1, page 2/6, lines 14-15). It is to be understood that the use of the bandwidth should be optimized, e.g. the distribution of the carriers is made in an adjacent manner in order to minimize the frequency distances.

The objections under the above-mentioned items also apply to the independent claims 9 and 17.
3. Irrespective of the above-mentioned lack of clarity, the subject-matter of claim 1 is, besides, not novel within the terms of Art. 33(2) PCT, so that the requirements of Art. 33(1) PCT are not met.

In addition, this IPEA does not share the interpretation of D1 and D2 as made by the applicant.

Document 1

Only regarding the amendments to claim 1:

the transmitting stations are coordinated in D1. Actually, the packets can be transmitted by several transmitting stations, and these stations are necessarily coordinated because conflicts have to be avoided.

In D1, the transmittable contributions are shifted at least in time because packets cannot be transmitted all together.

D1 discloses two kinds of traffic, real time (audio and video) and in the store and forward mode (e-mail).

Thus, the subject-matter of claim 1 is not novel.

Document 2

In their letter, the applicants state that the teaching of D2 does not relate to the management of the transmission capacity of the relay station at the relay station. However, in claim 1, the management is controlled by the control unit CTRL (drawing 3 and page 14 of the description). This control unit coordinates the transmission, forwarding and receiving.

In D2, there is also a central control unit (drawing 5 e.g.) for managing the transmission means. Therefore, the objection as to novelty with respect to D2 is maintained.

The remarks under the above-mentioned items also relate to the independent claims 9 and 17. Thus, the subject-matter of claims 9 and 17 is not new, either.

4. Contrary to the requirements of Rule 5.1 a) ii) PCT, the description does not mention the pertinent prior art disclosed in documents D1 and D2 nor the documents themselves.
5. The independent claims 1, 9 and 17 are not drafted in the two-part form according to Rule 6.3b) PCT. In the present case, however, a division seems appropriate. Consequently, the features known in combination with each other from the prior art (document D1) belong to the preamble (Rule 6.3b)i) PCT), and the remaining features to the characterizing portion (Rule 6.3b)ii) PCT).

Claims as amended on July 19, 2004

1. A control method

for managing the transmission capacity of at least one relay station of a transmission system, wherein the transmission system (Fig. 3) further comprises at least two transmitting stations (Fig. 4), at least one receiving station, and a control unit (CTRL) coordinating the at least one transmitting station, the at least one relay station and the at least one receiving station,

wherein

a respective transmitting station (Fig. 4) is designed so as to provide for transmission at least one type of traffic (IP) to be transmitted in a store and forward mode, a respective receiving station is designed so as to receive this at least one type of traffic to be transmitted in the store and forward mode, and

a respective relay station is designed so as to route this at least one type of traffic to be transmitted in the store and forward mode from the transmitting station to the receiving station,

and wherein

the control unit coordinating the same is designed so as to perform the following steps of:

detecting (S51, S21) the traffic to be transmitted by the at least two transmitting stations, and coordinating (S53; Fig. 7) the transmission of the traffic to be transmitted with consideration of traffic already

coordinated before within a specified time window and frequency range allowed for the transmission of the traffic to be transmitted,

wherein the traffic to be coordinated is composed at least of traffic contributions to be transmitted in the store and forward mode whose traffic volume is defined by the duration of the traffic contribution and the required bandwidth of the traffic contribution, and wherein coordinating is carried out such that within the area of a frequency-time diagram defined by the allowed specified time window and the allowed frequency range the area of the traffic contributions is maximized by shifting contributions to be transmitted in the store and forward mode within the frequency-time diagram and by coordinating the transmitting stations with each other.

2. A method according to claim 1, further comprising the steps of:

discriminating (S22, S24) the types of traffic in the traffic to be transmitted,
determining (S23, S25, S26) the type of transmission for the respective traffic in response to the discriminated type of traffic,
transmitting the traffic in the determined type of transmission from the respective at least one transmitting station via the at least one relay station to the respective at least one receiving station.

3. A method according to claim 2, wherein discriminating is carried out by way of an identification denoting the type of traffic of the respective traffic.

4. A method according to claim 2, wherein discriminating is carried out by way of an input interface denoting the type

of traffic of the respective traffic at which the traffic is input.

5. A method according to claim 1, wherein coordinating of the traffic contributions is carried out by way of the priority of the traffic contributions.

6. A method according to claim 5, wherein traffic contributions manually input by an operator are prioritized over real-time contributions which in turn have priority over store and forward contributions.

7. A method according to claim 6, wherein within the store and forward contributions the prioritization is carried out according to size so that within the store and forward contributions the largest traffic contributions to be transmitted are coordinated first.

8. A method according to claim 6, wherein the traffic contributions manually input by an operator and the real-time contributions occupy a fixed partial area within the area of a frequency-time diagram.

9. A control unit for managing the transmission capacity of at least one relay station of a transmission system, wherein the transmission system further comprises at least two transmitting stations, and at least one receiving station, wherein a respective transmitting station is designed so as to provide for transmission at least one type of traffic to be transmitted in a store and forward mode,

a respective receiving station is designed so as to receive this at least one type of traffic to be transmitted in the store and forward mode, and

a respective relay station is designed so as to route this at least one type of traffic to be transmitted in the store and forward mode from the transmitting station to the receiving station,

and wherein

the control unit includes:

detecting means (S51, S21) for detecting the traffic to be transmitted,

coordinating means for coordinating (S53; Fig. 7) the transmission of the traffic to be transmitted with consideration of traffic already coordinated before within a specified time window and frequency range allowed for the transmission of the traffic to be transmitted,

wherein the traffic to be coordinated is composed at least of traffic contributions to be transmitted in the store and forward mode whose traffic volume is defined by the duration of the traffic contribution and the required bandwidth of the traffic contribution, and wherein

coordinating is carried out such that within the area of a frequency-time diagram defined by the allowed specified time window and the allowed frequency range the area of the traffic contributions is maximized by shifting contributions to be transmitted in the store and forward mode within the frequency-time diagram; and

control means which, in response to an output of the coordinating means, control the coordinated transmission of the traffic from the respective at least one transmitting station via the at least one relay station to the respective at least one receiving station and coordinate the transmitting stations with each other.

10. A control unit according to claim 9, further comprising:
discriminating means for discriminating (S22, S24) the types of traffic in the traffic to be transmitted,
determining means for determining (S23, S25, S26) the type of transmission for the respective traffic in response to the discriminated type of traffic.
11. A control unit according to claim 10, wherein the discriminating means are adapted to perform discriminating by way of an identification denoting the type of traffic of the respective traffic.
12. A control unit according to claim 10, wherein the discriminating means are adapted to perform discriminating by way of an input interface denoting the type of traffic of the respective traffic at which the traffic is input.
13. A control unit according to claim 9, wherein the coordinating means perform coordinating of the traffic contributions by way of the priority of the traffic contributions.
14. A control unit according to claim 13, wherein traffic contributions manually input by an operator are prioritized over real-time contributions which in turn have priority over store and forward contributions.
15. A control unit according to claim 14, wherein within the store and forward contributions the prioritization is carried out according to size so that within the store and forward contributions the largest traffic contributions to be transmitted are coordinated first.
16. A control unit according to claim 14, wherein

the traffic contributions manually input by an operator and the real-time contributions occupy a fixed partial area within the area of a frequency-time diagram.

17. A transmission system comprising
at least one relay station,
at least two transmitting stations (Fig. 4),
at least one receiving station,
wherein
a respective transmitting station (Fig. 4) is designed so
as to provide for transmission at least one type of traffic
(IP) to be transmitted in a store and forward mode,
a respective receiving station is designed so as to receive
this at least one type of traffic to be transmitted in the
store and forward mode, and
a respective relay station is designed so as to route this
at least one type of traffic to be transmitted in the store
and forward mode from the transmitting station to the
receiving station, and
a control unit (CTRL) according to any one of the claims 9
to 16 coordinating the at least one transmitting station,
the at least one relay station and the at least one
receiving station.